**AMENDMENT TO BPCDT-20010618AAI**
**RAPID BROADCASTING COMPANY**
**KAUN-DT TELEVISION STATION**
**CH 51 - 200 KW**
**SIOUX FALLS, SOUTH DAKOTA**
**April 2002**

## TECHNICAL STATEMENT

This technical statement and attachments were prepared on behalf of Rapid Broadcasting Company ("RBC"), licensee of NTSC station KAUN, Channel 36, Sioux Falls, South Dakota. RBC also has a pending application seeking a construction permit for KAUN-DT on Channel 51 at Sioux Falls, South Dakota.[1] In a letter to RBC, dated March 12, 2002, the Commission's staff indicated that Class A LPTV station K38DU, Sioux City, South Dakota, was predicted to receive interference from the proposed, maximized KAUN-DT facility. As directed by the letter, RBC herein submits this instant amendment to address this issue.

## DISCUSSION

In BPCDT-20010618AAT, RBC indicated that its proposal would not cause interference to any Class A LPTV stations. The assessment was based on the use of the Probe II propagation model from V-Soft Communications. This model implements a Longley-Rice analysis, using the OET-69 guidelines, which has been found to yield results similar to those produced by the Commission's Longley-Rice computer model. Based on the outgoing interference calculations used, it was determined that K38DU would not be impacted by the proposed KAUN-DT, which was the basis for the statement in the initial KAUN-DT application.

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1) Originally, Channel 40 was allotted to Sioux Falls as the paired channel for KAUN's Channel 36. However, RBC requested and was granted Channel 51 in lieu of Channel 40.

In support of that statement, attached as Exhibit #1, is a tabulated incoming interference analysis for K38DU at Sioux City, South Dakota, listing those stations that theoretically interfere with K38DU. It is noted that the proposed KAUN, listed as KAUN-D.A (51), delivers interference to 39 persons in 7.2 square kilometers. This reflects interference to 0.035% of the population within the K38DU protected 74.0 dBu contour.[2] However, the interference cell calculated by the Probe II model is located in the extreme northwestern portion of the K38DU contour, with a portion of the cell outside the predicted protected contour (Exhibit #2). Upon further review, as can be seen on Exhibit #2A, there is **no** population within the theoretical KAUN-DT interference cell.

Based on the foregoing, RBC herein respectfully requests that the Commission review the interference to K38DU based on the Longley-Rice model, as outlined in OET Bulletin Number 69. If a waiver of the rules for consideration of this alternate prediction method is needed, one is respectfully requested. Further, using this model, there does not appear to be any actual interference to the K38DU protected 74 dBu contour. As such, KAUN-DT, as proposed, will not interfere with K38DU.

The foregoing was prepared on behalf of Rapid Broadcasting Company by Graham Brock, Inc. its Technical Consultants. All data herein is true and accurate to the best of our belief and knowledge. Data relative to the television stations was extracted from the CDBS database. We assume no liability for errors or omissions in that database that may be adverse to the information contained herein. All population data was extracted from the 2000 U.S. Census, PL 94-171 files.

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2) Since the theoretical population within the interference cell is less than 0.1%, it would be considered de minimus.

Graham Brock, Inc. Population Report

K38DU.C (51-) Sioux City, IA
TV Incoming Interference Study
Signal Resolution: 2 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
# of radials computed for contours: 72
Contours calculated using 8 radial HAAT.
LR Profile Spacing Increment: 1.0 km
Interference considered within the
reference station's 74 dBu FCC countour.
Threshold for reception: 74.0

Study Date: 4/4/02
TV Database Date: 03-29-02

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 112,258.

Stations which cause interference:

| Call Letters | H Units | Population | % | Area (sq. km) |
|---|---|---|---|---|
| KPTH (44+) | 53 | 137 | 0.122 | 25.22 |
| KPTH-D.C (49) | 53 | 137 | 0.122 | 25.22 |
| NEW.A (52Z) | 88 | 234 | 0.208 | 10.81 |
| AP621 (51Z) | 13 | 39 | 0.035 | 7.20 |
| AP624 (51Z) | 97 | 269 | 0.240 | 36.08 |
| AP627 (51Z) | 48 | 138 | 0.123 | 14.41 |
| AP330 (51Z) | 13 | 39 | 0.035 | 3.60 |
| KAUN-D.A (51) | 13 | 39 | 0.035 | 7.20 |
| AL240-D (49) | 18 | 44 | 0.039 | 14.41 |

Masking Summary:

| | Total Interference | | Unique Interference | |
|---|---|---|---|---|
| Call Letters | Population | % | Population | % |
| KPTH (44+) | 137 | 0.122 | 0 | 0.000 |
| KPTH-D.C (49) | 137 | 0.122 | 0 | 0.000 |
| NEW.A (52Z) | 234 | 0.208 | 157 | 0.140 |
| AP621 (51Z) | 39 | 0.035 | 0 | 0.000 |
| AP624 (51Z) | 269 | 0.240 | 131 | 0.117 |
| AP627 (51Z) | 138 | 0.123 | 0 | 0.000 |
| AP330 (51Z) | 39 | 0.035 | 0 | 0.000 |
| KAUN-D.A (51) | 39 | 0.035 | 0 | 0.000 |
| AL240-D (49) | 44 | 0.039 | 0 | 0.000 |

Stations considered which do not cause interference:



EXHIBIT #1
AMEND BPCDT-20010618AAI
RAPID BROADCASTING COMPANY
KAUN-DT TELEVISION STATION
CH 51 - 200 KW
SIOUX FALLS, SOUTH DAKOTA
April 2002

KPTH-D (49)
K51EP (51+)
NEW.A (52-)
K25AA.A (52+)
K38DU.C (54+)
NEW.A (54+)
K49DX.A (58Z)
K51CY (51-)
K51GL.C (51-)
K51AL (51Z)
K51EN (51Z)
K25EI.C (51Z)
K63AU.C (51+)
K51CC (51N)
AP311 (51Z)
K52ES (52+)
K66AR (66N)
KAUN-D.P.A (51)
K56GF (51+)
K56GF (66N)

Stations which were not considered:

NEW.A (51-)

| Call Letters | City | State | Dist | Bear |
|---|---|---|---|---|
| KPTH (44+) | Sioux City | IA | 12.4 | 33.9 |
| KPTH-D.C (49) | Sioux City | IA | 12.4 | 33.9 |
| KPTH-D (49) | Sioux City | IA | 12.4 | 33.9 |
| NEW.A (51-) | Sioux City | IA | 10.1 | 255.4 |
| K51EP (51+) | Iowa Falls | IA | 234.3 | 93.3 |
| NEW.A (52-) | Sergeant Bluff | IA | 0.4 | 180.0 |
| NEW.A (52Z) | Sioux City | IA | 12.8 | 292.4 |
| K25AA.A (52+) | Rock Rapids | IA | 98.7 | 5.2 |
| K38DU.C (54+) | Sioux City | IA | 0.0 | 0.0 |
| NEW.A (54+) | Sioux City | IA | 0.0 | 0.0 |
| K49DX.A (58Z) | Sioux City | IA | 12.4 | 33.8 |
| K51CY (51-) | Austin | MN | 286.9 | 62.6 |
| K51GL.C (51-) | Vesta | MN | 230.7 | 16.3 |
| K51AL (51Z) | Olivia | MN | 276.9 | 24.2 |
| K51EN (51Z) | Jackson | MN | 163.2 | 40.5 |
| K25EI.C (51Z) | Appleton | MN | 299.5 | 4.7 |
| K63AU.C (51+) | Granite Falls | MN | 263.3 | 12.6 |
| K51CC (51N) | O'neill | NE | 189.3 | 269.0 |
| AP311 (51Z) | Lincoln | NE | 165.2 | 191.4 |
| AP621 (51Z) | Lincoln | NE | 204.2 | 202.7 |
| AP624 (51Z) | Lincoln | NE | 141.4 | 194.3 |
| AP627 (51Z) | Lincoln | NE | 165.1 | 192.1 |

| | | | | |
|---|---|---|---|---|
| AP330 (51Z) | Lincoln | NE | 201.5 | 201.5 |
| K52ES (52+) | Norfolk | NE | 100.9 | 239.7 |
| K66AR (66N) | Decatur | NE | 54.4 | 175.7 |
| KAUN-D.P.A (51) | Sioux Falls | SD | 114.4 | 349.2 |
| KAUN-D.A (51) | Sioux Falls | SD | 114.4 | 349.2 |
| K56GF (51+) | Sioux Falls | SD | 121.7 | 345.4 |
| K56GF (66N) | Sioux Falls | SD | 121.7 | 345.4 |
| AL240-D (49) | SIOUX CITY | IA | 12.4 | 33.2 |

Totals for K38DU.C (51-)

| | | | |
|---|---|---|---|
| Calculation Area Population: | 115,177 | ( 858.5 | sq. km ) |
| Not Affected by Terrain Loss: | 112,258 | ( 836.9 | sq. km ) |
| Total NTSC Interference: | 486 | ( 57.7 | sq. km ) |
| DTV Only Interference: | 0 | ( 3.6 | sq. km ) |
| Total DTV Interference: | 137 | 28.8 | sq. km ) |
| Interfered Population: | 486 | ( 61.3 | sq. km ) |
| Interference Free: | 111,772 | ( 775.6 | sq. km ) |
| Percent Interference: | 0.43 | | |
| Terrain Blocked Population: | 2,919 | ( 21.6 | sq. km) |
| Contour Area Population: | 115,880 | | |

| | Housing Units | Population | % of County |
|---|---|---|---|
| Iowa | | | |
| Plymouth County | | | |
| County Pop | 9,880 | 24,849 | |
| K38DU.C (51-) | 1,054 | 2,912 | |
| KPTH (44+) | 39 | 99 | 3.40 |
| KPTH-D.C (49) | 39 | 99 | 3.40 |
| NEW.A (52Z) | 13 | 39 | 1.34 |
| AP621 (51Z) | 13 | 39 | 1.34 |
| AP624 (51Z) | 34 | 100 | 3.43 |
| AP627 (51Z) | 34 | 100 | 3.43 |
| AP330 (51Z) | 13 | 39 | 1.34 |
| KAUN-D.A (51) | 13 | 39 | 1.34 |
| AL240-D (49) | 18 | 44 | 1.51 |
| Ix Free | 994 | 2,752 | 94.51 |
| Woodbury County | | | |
| County Pop | 41,394 | 103,877 | |
| K38DU.C (51-) | 35,971 | 91,194 | |
| NEW.A (52Z) | 61 | 157 | 0.17 |
| AP624 (51Z) | 49 | 131 | 0.14 |
| Ix Free | 35,861 | 90,906 | 99.68 |

| | Housing Units | Population | % of County |
|---|---|---|---|
| Nebraska | | | |
| Dakota County | | | |
| County Pop | 7,528 | 20,253 | |
| K38DU.C (51-) | 6,223 | 16,911 | |
| Ix Free | 6,223 | 16,911 | 100.00 |

| | Housing Units | Population | % of County |
|---|---|---|---|
| South Dakota | | | |
| Union County | | | |
| County Pop | 5,345 | 12,584 | |
| K38DU.C (51-) | 591 | 1,241 | |
| KPTH (44+) | 14 | 38 | 3.06 |
| KPTH-D.C (49) | 14 | 38 | 3.06 |
| NEW.A (52Z) | 14 | 38 | 3.06 |
| AP624 (51Z) | 14 | 38 | 3.06 |
| AP627 (51Z) | 14 | 38 | 3.06 |
| Ix Free | 577 | 1,203 | 96.94 |

Graham Brock, Inc. - Broadcast Technical Consultants

KAUN INTERFERENCE BLOCK

K38DU.C
KPTH
KPTH-D.C
KPTH-D
AP311
AP621
AP624
AP627
AP330
KAUN-D.P.A
KAUN-D.A
AL240-D

**K38DU**
BPTTL-20000728AGI
Latitude: 42-29-39 N
Longitude: 096-18-21 W
Power: 20.00 kW
Channel: 51-
Frequency: 695.0 MHz
AMSL Height: 487.0 m
Elevation: 413.02 m
Horiz. Pattern: Directional
Vert. Pattern: Yes
Elec Tilt: 0.0
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 301.0
Receiver Ht AG: 10.0 m
Receiver Gain: 0 dB
Time Variability: 50.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

Point
42-40-00 N
096-40-00 W
096-20-00 W
096-10-00 W
KPTH-D.C
AL240-D
K38DU.C
North Sioux City
Sioux City
South Sioux City
Sergeant Bluff
42-30-00 N
Dakota
77
520
129
73
29

K38DU 74 dBu PROTECTED CONTOUR

**EXHIBIT #2**
**INCOMING INTERFERENCE ANALYSIS**
**K38DU CLASS A LPTV STATION**
**CH 51- - 20.0 KW (DA)**
**SIOUX CITY, IOWA**
**April 2002**

NOTE : RED "+" REPRESENT POPULATION CENTROIDS.

Scale 1:250,000
0 3 6 9 km

**K38DU**
BPTTL-20000728AGI
Latitude: 42-29-39 N
Longitude: 096-18-21 W
Power: 20.00 kW
Channel: 51-
Frequency: 695.0 MHz
AMSL Height: 487.0 m
Elevation: 413.02 m
Horiz. Pattern: Directional
Vert. Pattern: Yes
Elec Tilt: 0.0
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 301.0
Receiver Ht AG: 10.0 m
Receiver Gain: 0 dB
Time Variability: 50.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

**Graham Brock, Inc. - Broadcast Technical Consultants**

**K38DU 74 dBu PROTECTED CONTOUR**

42-35-00 N
096-29-00 W
096-28-00 W
096-27-00 W
Broken Kettle Rd
County Hwy K18
14
26
54
46
50

**EXHIBIT #2A**
**INCOMING INTERFERENCE ANALYSIS**
**K38DU CLASS A LPTV STATION**
**CH 51- - 20.0 KW (DA)**
**SIOUX CITY, IOWA**
**April 2002**

**NOTE : RED NUMBERS REPRESENT POPULATION CENTROIDS.**

Scale 1:20,000
km
0 0.27 0.53 0.8